

Part B contd. 41.

An antibody of claim 32.

Amendments to the Specification:

On page 6, after line 2, please **insert** the following paragraphs:

-- The HPT1, hPEPT1, D2H, and hSI receptors were selected for cloning as GIT receptor targets based on several criteria, including: (1) expression on surface of epithelial cells in gastro-intestinal tract (GIT); (2) expression along the length of small intestine (HPT1, hPEPT1, D2H); (3) expression locally at high concentration (hSI); (4) large putative extracellular domains facing into the lumen of the GIT; and (5) extracellular domains that permit easy access and bioadhesion by targeting particles.

The four recombinant receptor sites screened with the peptide libraries additionally have the following characteristics:

Part B contd. 42

Receptor

D2H Transport of neutral/basic amino acids; a transport activating protein for a range of amino acid translocases

Part B contd. 43

hSI Metabolism of sucrose and other sugars, represents 9% of brush border membrane protein Jejunum

Part B contd. 44

HPT1 di/tri peptide transporter or facilitator of peptide transport

Part B contd. 45

hPEPT1 di/tri peptide transporter

The following receptor domains were cloned and expressed as His-tag fusion proteins by standard techniques:

Cloning of Extracellular Domain of Selected Receptor Site

Part B contd. 46

Receptor

Domain (amino acid residues)

SEQ ID NOS

Part B contd. 47

hPEPT1^a

391-571

16

HPT1^b

29-273

15

hSI^c

272-667

14

^a Liang et al., 1995, J. Biol. Chern. 270: 6456-6463;
^b Dantzig et al., 1994, Association of Intestinal Peptide Transport with a Protein Related to the Cadherin Superfamily;
^c Chantret et al., Biochem. J. 285: 915-923;
^d Bertran et al., J. Biol. Chem. 268: 14842-14949.

The receptor proteins were expressed as His-tag fusion proteins and affinity purified under denaturing conditions, using urea or guanidine HCl, utilizing the pET His-tag metal chelate affinity for Ni-NTA Agarose (Hochuli, E., Purification of recombinant proteins with metal chelate adsorbent, Genetic Engineering, Principles and Methods (J.K. Setlow, ed.), Plenum Press, NY, Vol. 12 (1990), pp. 87-98).

As indicated in WO 98/51325, phage which showed specificity to a GIT receptor was further characterized by ELISA on a variety of recombinant proteins. Phage which continued to exhibit GIT receptor specificity was sequenced. Their insert sequences are summarized as follows:

SEQ.

<u>hSI</u>	<u>ID.NO</u>	<u>TARGET BINDING PHAGE INSERT SEQUENCE</u>
S15	17.	RSGAYESPDRGGRSYVGGGGCGNIGRKHNLWGLRTASPACWD
S21	18.	SPRSFWPVSRHESFGISNYLGCGYRTCISGTMTKSSPIYPRHS
S22	19.	SSSSDWGGVPGKVVRFKGRGCGISITSVLTGKPNPCPEPKAA
Sni10	20.	RVGQCTDSDVRRPWARSCAHQGCGAGTRNSHGCITRPLRQASAH
Sni28	21.	SHSGGMNRAYGDVFRELDRWNATSHTRPTPQLPRGPN
Sni34	22.	SPCGGSWGRFMQGGLFGGRTDGCAGHRNRTSASLEPPSSDY
Sni38	23.	RGAADQRRGWSENLGLPRVGWDAIAHNSYTFTSRRPRPP
Sni45	24.	SGGEVSSWGRVNDLCARVSWTGCCTARSARTDNKGFLPKHSSLR
SniAX2	25.	SDSDGDHYGLRGGVRCSLDRGCGLALSTVHAGPPSFYPKLSSP
SniAX4	26.	RSLGNYGVTGTVDTVLPMPGHANHLGVSSASSSDPPRR

SniAX6 27. RTTTAKGCLLGSFGVLSGCSFTPTSPPPHLGYPPHSVN
SniAX8 28. SPKLSSVGVMTKVTELPTEGPNAISIPISATLGPRNPLR

D2H

DAB3 29. RWCGAELCNSVTKKFRPGWRDHANPSTHHRTPPPSQSSP
DAB7 30. RWCGADDPCGASRWRGGNLSFGCGLRCSAAQSTPSGRIHSTSTS
DAB10 31. SKSGEGGDSSRGETGWARVRSHAMTAGRFRWYNQLPSDR
DAB18 32. RSSANNCEWKSDWMRRACIARYANSSGPARAVDTKAAP
DAB24 33. SKWSWSSRWGSPQDKVEKTRAGCGGSPSSTNCHPYTFAPPPQAG
DAB30 34. SGFWEFSRGLWDGENRKSVRSGCGFRGSSAQGPCPVTPATIDKH
DAX15 35. SESGRCRSVSRWMTTWQTQKGGCGSNVRGSPLDPSHQTGHATT
DAX23 36. REWRFAGPPLDWAGPSLPSFNASSHPRALRTYWSQRPR
DAX24 37. RMEDIKNSGWRDSCRWGDLRPGCGSRQWYPSNMRSSRDYPAGGH
DAX27 38. SHPWYRHWNHGDFSGSGQSRHTPPESPHPGRPNATI
DCX8 39. RYKHDIGCDAGVDKKSSVRGGCGAHSSPPRAGRGRGPRGTMVSRL
DCX11 40. SQGSKQCMQYRTGRLTVGSEYCGMNPARTHATPAYPARLLPRYR
DCX26 41. SGRTTSEISGLWGWGDDRS GYGWGNTLRPNYIPYRQATNRHRYT
DCX33 42. RWNWTVLPATGGHYWTRSTDYHAINNHRPSIPHQHPTPI
DCX36 43. SWSSWNWSSKTTRLGDRATREGCGPSQSDGCPYNGRLTTVKPRT
DCX39 44. SGSLNAWQPRSWVGGAFRSHANNLNPKPTMVTRHPT
DCX42 45. RYSGLSPRDNGPACSQEATLEGCGAQRLMSTRRKGRNSRPGWTL
DCX45 46. SVGNDKTSRPVSFYGRVSDLWNASLMPKRTPSSKRHDDG

hPEPT1

PAX9 47. RWPSVGYKGNGSDTIDVHSNDASTKRSLIYNHRRPLFP

PAX14 48. RTFENDGLGVGRSIQKSDRWYASHNIRSHFASMSPAGK
PAX15 49. SYCRVKGGEGGHTDSNLARSGCGKVARTSRLQHINPRATPPSR
PAX16 50. SWTRWGKHTHGGFVNKSPPGKNATSPYTDALQLPSDQGPP
PAX17 51. SQVDSFRNSFRWYEPSRALCHGCGKRDTSSTRIHNSPSDSYPTR
PAX18 52. SFLRFQSPRFEDYSRTISRLRNATNPSNVSDAHNNRALA
PAX35 53. RSITDGGINEVDLSSVSNVLENANSHRAYRKHRPTLKRP
PAX38 54. SSKVSSPRDPTVPRKGGNVDYGCGHRSARMPTSALSSITKCYT
PAX40 55. RASTQGGRGVAPEFGASVLGRGCGSATYYTNSTSCKDAMGHNYS
PAX43 56. RWCEKHKFTAARCSAGAGFERDASRPPQPAHRDNTNRNA
PAX45 57. SFQVYPDHGLERHALDGTGPLYAMPGRWIRARPQRNRDRQ
PAX46 58. SRCTDNEQC PDTGTRSRVSNARYFSSRLLKTHAPHRP
*b3
b4*
P31 59. SARDSGPAEDGSRAVRLNGVENANTRKSSRSNPRGRRHP
P90 60. SSADAECAGSLLWWGRQNNNSCGSPTKKHLKHRNRSQTSSSH
5PAX3 61. RPKNVADAYSSQDGAAAETSHASNAARKSPKHKPLRRP
5PAX5 62. RGSTGTAGGERSGVLNLHTRDNASGSGFKPWYPSNRGHK
5PAX7 63. RWGWERSPSDYDSDMDLGARRYATRTHRAPPRVLKAPLP
5PAX12 64. RGWKCEGSQAAYGDKDIGRSRGCGSITKNNTNHAHPSHGAVAKI

HPT-1

HAX9 65. SREEANWDGYKREMSHRSRFWDATHLSRPRRPANSGDPN
HAX35 66. EWYSWKRSSKSTGLGDTATREGCGPSQSDGCPYNGRLTTVKPRK
HAX40 67. REFAERRLWGDDLSWRLDAEGCGPTPSNRAVKHRKPRPRSPAL
HAX42 68. SDHALGTNLRSDNAKEPGDYNCCGNGNSTGRKVFNRRRPSAIFT
HCA3 69. RHISEYSFANSHLMGGESKRKGCGINGSFSPTCPRSPTPAFRRT
H40 70. SRESGMWGSWWRGHRLNSTGGNANMNASLPPDPPVSTP
PAX2 71. STPPSREAYSRPYSVDSDSDTNAKHSSHNRRLRTRSRPN
--